a marked one of cancer of the tongue, who came for operation, but careful examination showed the condition to be inoperable. Medical treatment was advised, but the patient's condition became steadily worse; he had terrible hemorrhages and excruciating pain, deglutition was almost impossible, and the tongue was ulcerated and adhesive to the floor of the mouth. The right axillary and cervical glands were of enormous size, and, on the whole, his condition was extremely bad. At this time the injection of the serum was begun and repeated at frequent intervals. After the first injection the pain disappeared, sleep became possible, the tongue decreased in size, and deglutition was easily performed. After ten injections the patient was so much improved that he was able to attend to his business. There was a cessation of the steady loss of weight, and the patient could speak, which was impossible before the beginning of the treatment. The enlarged glands decreased somewhat in size, and the condition of the tongue was improved. The second case was that of a woman with cancer of the breast, who also improved under this treatment. The tremor diminished markedly in size, but ultimately it was removed by operation. On microscopical examination it proved to be a cylindrical epithelioma. The serum of Wlaëff has an evident action upon neoplasms, as has been proved in many cases, but this action is not radical, and, furthermore, it is not lasting, for experience has shown that when one ceases the injections the tumor at once begins to grow and extend. This serum will never replace operative interference.

PEDIATRICS.

UNDER THE CHARGE OF

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Death due to Hypertrophy of the Thymus.—TAILLENS (*Revue Médicale de la Suisse Romande*, June 20, 1901, p. 345) sums up his conclusions of a study under this title as follows:

1. In certain cases hypertrophy of the thymus can be a cause of death.

2. The mechanism of this accident varies as it follows the convulsive form, producing sudden death by action on the heart, or the compressive form, which acts slowly by asphyxiation.

3. In the convulsive form treatment is useless since the symptoms occur so rapidly that there is no time to act. In the compressive form medical treatment is useless, and even intubation or tracheotomy has proven futile. The only case definitely diagnosticated and cured by operative procedure—Siegel's—suggests a rational plan of treatment of this form (opening of anterior mediastinum and suture of the gland to the substernal fascia).

4. The pathological importance of hypertrophy of the thymus may be very considerable, especially in legal medicine, in which death has been wrongly attributed to negligence or criminal intent. (Cases cited by Grawitz and Ramoino.) It is possible that in rare cases the thymus may be at fault when death is attributed to goitre, or in some cases in which it is impossible to dispense with the tube after tracheotomy.

5. The expression thymic asthma does not seem to the author to be exact. The rapid convulsive form would be better designated under the name of cardiac death, or sudden death, due to the thymus, while the slow asphyxic form should be designated as thymic tracheostenosis. These two designations would serve to emphasize the difference between the two forms and their different mechanisms, as well as to prevent the classification under the name thymic asthma of a number of affections which have nothing in common with the thymus gland.

The Diazo Reaction in Diphtheria.—LOBLIGEOIS (*Revue mensuelle des Maladies de l'Enfance*, June, 1901, p. 270) has made a careful investigation of this sign in the urine of 118 cases of diphtheria, confirmed by bacteriological examination, among patients under treatment at the Hôpital Trousseau in the service of Guinon. The urine was examined every day from admission to discharge from the hospital in each case. In control cases it was found that the use of the antitoxic serum had no influence upon the appearance of the reaction, and could be neglected altogether in the results.

According to RIVIER (*Thèse de Paris*, 1898), who has collected forty-four cases in which the presence or absence of this reaction had been recorded, only five positive results had been observed by seven competent authorities (Ehrlich, Escherich, Feer, Nissen, and others). The author's observations in the much larger series lead him to believe that the frequency of recurrence of the diazo reaction is even less than these figures would indicate, since he found it only in five cases out of his 118, from which four, he thinks, should be eliminated for various reasons: two, in which the patients coincidently suffered from scarlatina; one, in which the reaction was positive only on the day of death, the child dying in convulsions from bronchopneumonia, and a fourth, in which the diazo reaction was positive for four consecutive days while the child presented an intense scarlatiniform erythema which was probably a true scarlatina. This, therefore, shows but one instance of positive reaction in 114 cases of diphtheria which were not accompanied by another known infectious malady.

In ten cases the color was a bright red, but on agitation the foam was orange-colored and not rose, and, therefore, could not be accepted as positive. In most of these cases the color persisted only for a day, three times only for a second day. Four times it coincided with a serum erythema; once the child was affected with pneumonia, and once there was a concomitant pleurisy. In the four cases in which the coloration lasted for a day coincident with a serum eruption, it was never characteristically positive. Since then examinations of the urine of seven or eight cases during the serum erythema has yielded negative results.

This latter observation offers an important diagnostic sign. Not infrequently the diagnosis between a scarlatiniform erythema due to serum and a true scarlatina is extremely difficult, since scarlatina often complicates diphtheria. Clinically the eruptions are very similar, and the throat may be quite red in both diseases. Under these conditions the presence or absence of the diazo reaction offers valuable aid in the diagnosis. In twelve cases showing the serum exanthem the diazo reaction was absent. In scarlatina Brewing found it present in three out of six cases; Nissen, in eleven out of twenty-three in the first days of the disease, and Rivier in twelve out of twenty-six. These figures appear to be lower than the author's experience would indicate, for he has found the reaction present in eight out of eleven cases of one series and in all of seven cases of a second series, the test having been made upon cases of scarlatina in full eruption. Altogether, the diazo reaction has been found positive in scarlatina in twenty-six out of fifty-five cases of other observers, and in fifteen out of eighteen in his own researches. He, therefore, considers the diazo reaction as an important diagnostic sign between scarlatina and the scarlatiniform erythema due to serum. If the reaction is positive, scarlatina may be affirmed; if negative, there is strong presumption against scarlatina.

The same conclusion would be justified, in the absence of other signs, for the diagnosis between an antitoxin rash and measles, in the latter of which the diazo reaction has been found positive seventy-five times out of eighty-five, according to the authors cited by Rivier.

Value of the Widal Reaction in Infancy.—JOHN LOVETT MORSE (*Archives of Pediatrics*, May, 1901) concludes that in early infancy a positive Widal reaction is of somewhat less diagnostic value than in older children and adults. If the mother has had typhoid, and especially if she is nursing the infant, it should be looked on with some suspicion, unless associated with other characteristic signs of typhoid. Examination of the mother's blood and milk and the cessation of breast feeding will then assist in estimating the true value of the reaction in the infant.

Malaria in Children.—WM. A. NORTHRIDGE (*Brooklyn Medical Journal*, April, 1901, p. 175) states that the four most important symptoms of malaria in the child are fever, periodicity, anæmia, and enlarged spleen. The first three of these symptoms are always present; the enlargement of the spleen is also constant, but cannot always be detected. In acute cases the enlargement may not be discovered because it diminishes rapidly after the paroxysm is over. The quotidian is by far the most common type of the disease in the young child. Of the 576 cases upon which the study is based, 456 were quotidian, 84 tertian, 7 double quotidian, and 17 remittent. In 3 the paroxysm recurred upon the seventh day; 1 was quartan, 3 were recorded as "dumb ague," and 5 as cases of chronic malarial poisoning. He believes that the feeble resisting power of the infant accounts for the frequency of the quotidian type, rather than the double infection theory of Thayer. The double quotidian type is quite rare, and of the 7 cases recorded all were in very young children, the oldest of whom was only two years of age. A curious association of types occurred in a breast-fed baby, aged fifteen months, and its mother, the child having a quartan type while the mother was ill with the tertian variety.

The chill occurs in the young child with somewhat more relative frequency than is commonly supposed, according to the author's statistics. Of 504 cases below the age of five years, 25, or about 1 in every 20 cases, were ushered in with a chill; 27 were taken ill with a convulsion. Chill occurred in 1 case each at four months, eight months, and ten months of age; in 4 cases between one and two years; in 6 cases between two and three years; in 5 cases between three and four years, and in 7 cases between four and five years. Thus the fact is emphasized that the older the child the more apt it is to have a well-marked chill.

Convulsions occurred in 27 of the 504 cases below five years of age, and of this number 23 were between six months and three years, while the remaining 4 were between three and six years of age, showing that the older the child the less apt is a convulsion to occur. Fifteen of the 23 cases were in children below the age of two years, and 7 were in infants below the age of thirteen months, so that the tendency to convulsions is about equally strong for each of the first three years of life.

In the ordinary type of the disease the symptoms are, in the main, convulsions, a cold, pale face, nausea and vomiting, feeble pulse, trembling taking the place of a chill, and followed by high fever and great anæmia. Often the clinical diagnosis must be made on the periodical return of a high fever with or without the presence of an enlarged spleen, all other symptoms being absent. Malarial torticollis was found in eight cases and malarial chorea in ten cases. Diarrhœa of periodic type occurred in ten cases.

Repeated Lumbar Puncture in Cerebro-spinal Meningitis.—KOPLIK (*Medical News*, 1891, No. 1471) reports a series of five cases of cerebro-spinal meningitis due to the meningococcus, in which repeated lumbar puncture was practised. Fifteen punctures in all were made, as early as the fifth and as late as the thirty-seventh day of the disease. Four of the five cases recovered, the fatal case occurring in an infant, aged eight months.

The indications for puncture were continuous headache, accompanied by somnolence and delirium, chills, sharp rise in temperature, increase in opisthotonos, and coma. If improvement followed puncture the operation was repeated as the symptoms increased again in severity.

The benefit of this plan of treatment seems to lie in a diminution of pain and a reduction of the symptoms due to toxæmia and mechanical pressure. The withdrawal of an appreciable amount of fluid from the spinal canal which contains bacteria and the toxic products of inflammation must be beneficial, in the long run, on the course of the disease. As a curative method it seems destined to rank with aspiration of the pleural cavity.

A French View of Infantile Scurvy.—Rather remarkable conclusions in regard to the etiology and pathology of infantile scurvy as observed in France are given in a recent Paris thesis by PAUGAM (*Contribution à l'étude de la maladie de Barlow en France*, Paris, 1901). According to this author the disease is very rare in France, and results from the use of milk modified in various ways and especially "maternized milk" (seven out of eleven cases). Sterilized milk, he states, does not come under the title of a modified milk. The disease has no definite clinical picture, and the grave hemorrhagic form often described by foreign writers is exceedingly rare. Scurvy always occurs, in this writer's opinion, in patients with rhachitis, either evident or latent—a theory that can no longer be accepted for American cases, at least.

Clinical, anatomo-pathological, and pathogenic study of this syndrome leads the author to conclude that Barlow's disease is a form of rhachitis, an exaggeration of the congestive process of rickets with hemorrhagic tendencies.

The prophylactic treatment of rickets is to be instituted; modified milks and alimentary specialties are to be avoided.

In case of existent disease a well-ordered alimentary regimen makes the symptoms disappear. Antiscorbutic remedies are only adjuvants, and do not constitute a specific medication.

[Infantile scurvy is so well understood by both American and English writers that comment on this author's conclusions seems unnecessary.—ED.]

Prophylactic Injections of Diphtheria Antitoxin.—At a recent meeting of the Société de Pédiatrie (Séance, June 11, 1901; *Revue mensuelle des Maladies de l'Enfance*, July, 1901, p. 335) AUSSET discussed this question and declared himself in favor of it. He cited the case of a family in which diphtheria developed. Of two other children one was sent to the country, the other, an infant, aged eleven months, nursed by his mother, received a prophylactic injection of serum. This child escaped the disease, while the one who had been sent away developed diphtheritic angina complicated by a suppurative otitis. The speaker was convinced that the attack would have been avoided had a preventive injection been given.

BARBIER was also in favor of such injections in families in which diphtheria was declared, but since the time of immunity is uncertain it is important to keep such children under observation for some time.

NETTER had collected 32,484 observations of prophylactic injections. Of this number it was noted that, after elimination of the cases in which the disease developed in less than twenty-four hours after the injection, or more than thirty days after, there were 192 cases in which diphtheria developed in spite of the preventive injection—a proportion of 6 per cent. of failures.

On the other hand, Netter has recently made ninety preventive injections, with two failures—a proportion of 2.17 per cent.; while of twenty-five children simply isolated without receiving the serum, three developed the disease—a proportion of 12 per cent.

COMBY and SEVESTRE also testified to the value of prophylactic injections in controlling the spread of the disease. In terminating the discussion the following resolution was adopted:

The Société de Pédiatrie affirms that preventive inoculations present no serious dangers and confer immunity in the great majority of cases for some weeks. It recommends their employment in children's institutions and in families where scientific surveillance cannot be exercised.

Leucocytosis in Measles.—RENAUD in a recent thesis (*La leucocytose dans la rougeole*, Thèse de Lausanne, Paris, 1900) presents interesting conclusions as to the condition of the blood during the activity of the measles infection.

Fourteen days before the appearance of the exanthem the blood is normal, which corresponds with what might be expected at the moment or even just before the beginning of the incubative stage.

During the incubative period there begins a relative as well as absolute increase in the polynuclear leucocytes, with an absolute increase, though relative decrease, of the lymphocytes. In one observation, for example, the number of leucocytes was 16,200 above the normal, and of this number 13,268 belonged to the polynuclear group, the remainder to the lymphocytes. As the lymphocytes formed only 21 per cent. of the leucocytes, it is evident that during the period of incubation the increase of leucocytes is especially due to the polynuclear group.

This pre-eruptive hyperleucocytosis commences at the beginning of the period of incubation, increases rapidly, and reaches its maximum about the sixth day before the appearance of the eruption, but from this time on it diminishes.

Examination of the blood during the period of the enanthem shows that in normal cases there now occurs a fall in the proportion of the polynuclears, while in those cases which are or will be complicated by another affection this fall is not observed. This fact is of decided importance in the prognosis.

At the same time that, during the enanthem in normal cases, the polynuclear neutrophiles diminish, myeloplaques appear, and there is a slight increase in the lymphocytes.

The eruptive stage is characterized by hypoleucocytosis due to a constant diminution, absolute and relative, of the polynuclears, with increase (sometimes relative only) of lymphocytes and myeloplaques. The eosinophiles disappear. This hypoleucocytosis generally reaches its maximum on the second day, about twenty-four hours after the beginning of this period. The number of leucocytes is then reduced about half, and this is at the expense of the polynuclear neutrophiles. From this point, however, leucocytosis increases more or less rapidly after the disappearance of the exanthem, reaching its normal level from one to five days (generally the second) after the disappearance of the rash, provided no complications interfere.

In complicated cases, however, with the general increase there is also an increase, absolute and relative, in the polynuclears; the absolute number of lymphocytes also increases, but less markedly. In these cases the myeloplaques remain in the blood, and numerous eosinophiles appear. Finally, during the post-eruptive period if there are complications there is a hyperleucocytosis, the increase depending upon the polynuclears, which sometimes are alone responsible for it.

These modifications in the elements of the blood are of considerable importance in both diagnosis and prognosis. Quite recently Meunier has called attention to a symptom of the incubative stage which he calls the "premorbillous loss," and which consists in a diminution of weight of about 50 grammes per day, beginning on the fourth or fifth day after infection, and reaching a total of about 300 grammes. An examination of the blood at this time, therefore, furnishes another early diagnostic sign, which is at least as important as that of Meunier. This sign, as already indicated, is a hyperleucocytosis which begins with the infection, and increases rapidly, reaching a maximum eight or nine days before the appearance of the exanthem, and, therefore, four or five days before the period of contagiousness. If this phenomenon of hyperleucocytosis be sought for among children who have been exposed to the contagion, a diagnosis may be made during the incubative stage and before the case becomes infective to others, thus permitting of early isolation and stamping out of the epidemic.

In differential diagnosis during the period of the exanthem, when the rash may be mistaken for various toxic infections or drug eruptions, it must be remembered that none of these affections is accompanied by hypoleucocytosis, or even that increase in the number of white corpuscles is to be observed, the exanthem following injection of antidiphtheritic serum, for example, being accompanied by a polynuclear hyperleucocytosis. The diagnosis from urticaria or syphilitic roseola may be clinically very difficult, but these affections are not accompanied by hypoleucocytosis. It is only in rare cases that the diagnosis of measles from scarlatina may be difficult, but, according to hæmatologists (among them Türck) who have studied the latter disease, there is a hyperleucocytosis, with increase of eosinophiles—a phenomenon quite the reverse of that observed in the eruptive stage of measles.

As an aid to prognosis, it has been shown that in the eruptive period a slight hypoleucocytosis which rapidly changes to a hyperleucocytosis is an indication of a present or approaching complication. This reaction is very delicate, since so slight a complication as a panaris, a conjunctivitis, or a simple bronchitis is announced by a more or less considerable increase in the leucocytes. In grave complications, such as suppurative otitis, bronchopneumonia, or tuberculosis, this hyperleucocytosis is very marked. During the period of desquamation, when naturally the leucocytosis returns to normal, the hyperleucocytosis of complications persists as long as the organism is able to resist. Rapid fall in the count at such a time is of grave import, as is also the continuance of the hypoleucocytosis, in the presence of a complication, after the time that a return to a normal count should be expected.

It may be added that this law does not apply to affections normally accompanied by hyperleucocytosis, such as typhoid, malaria, and acute and generalized septicæmia, which, however, are extremely rare complications of measles.

THERAPEUTICS.

UNDER THE CHARGE OF

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Diuretic Action of Caffeine and Theobromine.—DR. HENRI ANTEN, in an extended research on the kidney functions relative to diuretics, and more particularly limited to the study of the xanthin diuretics (caffeine and theo-